Possible immunologic involvement of antioxidants in cancer prevention

Author: Zhang YH, Kramer TR, Taylor PR, Li JY, et.al.

Journal: Am J Clin Nutr 1995; 62(6 Suppl):1477S-1482S 1995

Abstract: The people of Linxian County, China have one of the world's highest rates of esophageal cancer. Two intervention trials were conducted to determine whether supplementation with specific vitamins and minerals could lower mortality from or incidence of cancer in this population and whether supplementation with multiple vitamins and minerals would reduce esophageal and gastric cardia cancer in persons with esophageal dysplasia. About 30,000 general population (GP) subjects in the GP trial were randomly assigned to one of eight intervention groups according to a one-half replicate of a 2(4) factorial experimental design and were supplemented for 5.25 y with four combinations of micronutrients at doses from one to two times the US recommended dietary allowance (RDA). About 3000 subjects in whom dysplasia was diagnosed in the dysplasia trial were randomly assigned to groups receiving daily supplementation with 14 vitamins and 12 minerals at two to three times the US RDA or placebo for 6 y. Results of the dysplasia trial indicate that in individuals with esophageal dysplasia, micronutrient supplementation had little effect on T lymphocyte responses. In contrast, male participants in the GP trial who were supplemented with beta-carotene, vitamin E, and selenium showed significantly ($P < 0.05$) higher mitogenic responsiveness of T lymphocytes in vitro than those not receiving these micronutrients.